

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE.

In re Application of

Group art unit 2834

Sten R. Gerfast

Serial No. 10/733,944

5 Filed 12/12/03



Examiner Tran N. Nguyen

For GENERATOR WITH OUTPUT OPTIONS AND LOW LOSS WINDINGS.

Commissioner of Patents

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In response to the office action dated 5/20/2005 please amend as follows:

Claim Rejections 35 USC -112

Specification is objected to due to unclear language. Claim 1-22 (Specifically claim 1 and claim 9)

The language in claim 1 is stating:

15 "each (salient poles) including alternately wound coils forming a single coil with two free ends"

is pictorially shown in Fig 1. "Each stator salient poles 110 is shown with alternately wound coils 105 forming a single coil with two free ends."

The Examiner is exactly correct in your (c) interpretation.

The pictorial (Fig 1.)

20 with three coils wound on each salient pole (alternately wound)

is showing "one free end" starting right above the number 110 and the other "free end" finishing right above the number 120.

For clarification: Remove " forming " (Line 5 Page 7) and insert "coupled to form "

The new claim 1. would then read: 1. A single coil generator comprising:

25 a rotor journaled in a generator frame, said rotor having a plurality of poles,

a stator with a like number of salient poles, each including alternately wound coils,

coupled to form a single coil with two free ends, generating AC that is connected to an AC load.

Similarly with respect to claim 9: Remove "forming" (line 20 Page7) and insert "coupled to form" after "alternately wound coils ".....to clarify Claim 9.

With these clarifications that more distinctly claim the subject matter in the invention

I respectfully that all the 112 rejections be withdrawn.

5 Claim Rejections 35 USC- 103.

Claim 1-2, 4-8 and 19-22 are rejected over Weissensteiner (US Pg Pub 2004/0232796)

Weissensteiner discloses a machine that can be used as a generator that has a rotor (6)

having a plurality poles, a stator (1) with the same number of poles(4), as the rotor poles.

In claim 1 Weissensteiner is referring to a turn of wire when he states: "at least one coil are wound

10 over a coiling axis" that is expanded to include "multiple coiling (turns) in claim 2 and 3.

In his figure 1 ... he shows 2 distinctly separated coilings with four free ends, with each of them

inter-connecting 3 coilings separated by 120 mechanical degrees. If we number his coilings

starting with coiling number 1 situated left of his numeral 1, the three, series connected coilings

that are inter-connected are numbers 1,3 and 5 ending up as two free ends marked with an AC symbol.

15 His second separate "coilings" are three, series connected coilings number 2,4 and 6 ending up as

two free ends marked with a AC symbol. He says that his four free ends are connected to something

that he calls "consumer devices". He does not claim or states pictorially that he has:

"a stator with a like number of salient poles, each including alternately wound coils,

[forming] (or coupled to form)

20 a single coil with two free ends, generating AC that is connected to an AC load." (Gerfast claim 1.)

Even if he attempted to alternately wind "coilings" on two adjacent coiling axis,

with his different magnetic structure, the magnetic flux lines are "splitting" into

two separated "coilings" wound on said two coiling axis, causing a cancellation effect shown in

the enclosed modified Weissensteiner Fig 1. in color. [Exhibit "A" attached]

By using TWO times THREE coilings (W claim 3) with four free ends and two AC loads( W claim 5) he is avoiding some of this cancellation effect. His un-orthodox construction and his strong implication that his machine is operating outside of Ohms law, makes one wonder about his confusing description.

Weissensteiner [0025] “ Interaction of coils can be demonstrated by short-circuiting the stator coils.

5 In a conventional generator, a short circuit produces a braking action. In the case of the present generator, however, no braking action WHATSOEVER takes place, as tests with a simple sample machine have shown. On the contrary, the drive power required FALLS BENEATH the idling power.”

Ohms law for AC:  $\text{Power in watts} = E^2 \times \cosine \text{ divided by } Z$

or for DC :  $\text{Power in watts} = E^2 \text{ divided by the resistance}$  If the resistance goes down  
10 to a low value (or short circuit) the drive power to the generator has to increase

[unless Ohms law is cancelled] [ Weissensteiner statements [0026] is it a over-unity? statement?]

[or does the inventor has a “ mutual induction ....coil ...voltage increaser”. ] Weissensteiner [0026]

Please compare the attached Exhibit “A”..... with Gerfast Fig 1. “where the all the flux lines (without cancellation effect) are leading through each salient stator pole

15 generating AC current in every salient pole all the time.

See also Line 4 Page 3 of the Gerfast description:

“Another object is to have a more efficient power producing winding with basically all the copper (100 %) windings in front of rotor poles at one time”. This is done with: “Like number of stator/rotor poles and alternately wound coils forming a single coil with two free ends”. And it is different from

20 permanent magnet motor/generators that are on the market today,

that generally are 3 phase, switching on 2 of the phases at a time, thereby using 66% of the copper at a time, and normally have un-equal number of poles; rotor poles versus stator poles.

According to the above cited differences Weissensteiner does not claim or states pictorially that he has:  
“a stator with a like number of salient poles, each including alternately wound coils,  
[forming] (or coupled to form)  
a single coil with two free ends, generating AC that is connected to an AC load.” (Gerfast claim 1.and 2.)

5 With respect to Weissensteiner's coils they are not in a position in front of the rotor poles at all the time.  
Because of his construction with horseshoe magnets that have a gap between their north pole  
and their south pole, his coils are not exposed to a magnetic flux when the gaps are in front of his coils.  
Angular measurements shows each gap to be 15 degrees x 6 poles = 90 degrees out of 360 degree rotation  
which is only 75% of magnetic flux exposure.

10 In addition his rotor poles (number 6) are severely back-set from the stator surface,  
(a very wasteful use of magnetic flux) and it also magnetically decreases his effective rotor/stator width.  
With respect to his dimensional width of rotor versus stator poles, it is clearly stated above  
that he does not have the same dimensional width.

In his Fig 2. he does not show any support

15 for magnets, not showing any rotor, not showing any shaft.

His Fig. 4. drawing is shown with 12 separate coilings with 8 free ends. that is neither brushless  
or void of slip rings.

Weissensteiner says that his coilings can be “opened “, The value of which would probably  
be questioned both by the Examiner and generator designers. Paralleling of coils are commonly done

20 in the industry to decrease “wind-time” by winding the coils using two wires at the same time  
in the winding-needle.

The Examiners statement that : “ The multiple coiling consist of coil section alternating on the periphery of the stator. The multiple coiling consists of a stator coils of two coils, separately wired to consumer devices with coil sections on the periphery of the stator in alternative sequence and connected in series” is very similar to my statement above: His two separate “coilings” are three, series connected coilings number 2,4  
5 and 6 ending up as two free ends marked with a AC symbol. He says that his four free ends are connected to something that he calls “consumer devices”. He does not claim or states pictorially that he has: “a stator with a like number of salient poles, each including alternately wound coils, [forming] (or coupled to form) a single coil with two free ends, generating AC that is connected to an AC load.” (Gerfast claim 1. )  
10 So, in general he does not have “a single coil with two free ends “and therefore does not disclose the claimed Gerfast invention.

I therefore respectfully ask that 1-2, 4-8 and 19-22 rejections be withdrawn.

Namikawa is showing a transformer circuit, that is used all over the world, that contains a bridge rectifier supplying a DC to a DC load. But it has no AC to an AC load. Namikawa does not have: “a generator output  
15 split into AC and rectified DC and with the appropriate switching components .

I fail to see any obvious connection between these very different component; A transformer versus “a generator with high and low voltage, AC and DC output, plus switches to control these outputs”  
I respectfully ask that the claim for obviousness be withdrawn.

With respect to Gerfast claim 5, I agree with the Examiner that the claw pole rotor is well known  
20 but it has, to the best of my knowledge, newer been used in a generator that has a:  
“rotor having a plurality of poles, a stator with a like number of salient poles, each including alternately wound coils, coupled to form a single coil with two free ends, generating AC that is connected to an AC load.”

A search to find such a combination failed to find any in the patent field.

For that reason I respectfully ask that the "obvious" rejection of claim 5 be withdrawn.

I also respectfully ask that all the mentioned claim rejections be withdrawn.

Respectfully submitted

  
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